

Notice No.2

for the Code for Lifting Appliances in a Marine Environment, July 2022

The status of this Rule set is amended as shown and is now to be read in conjunction with this and prior Notices. Any corrigenda included in the Notice are effective immediately.

Please note for the corrigenda items paragraphs, Tables and Figures are not shown in their entirety.

Issue date: June 2023

Amendments to	Adoption Date	Applicable Date
General Regulations, Section 5	1 July 2023	1 July 2023
Chapter 1, Section 1	1 July 2023	1 July 2023
Chapter 8, Section 6	1 July 2023	1 July 2023



General Regulations

■ Section 5 Applicability of Classification Rules and Disclosure of Information

5.1 LR has the power to adopt, and publish as deemed necessary, Rules relating to classification and has (in relation thereto) provided the following:

- a. Except in the case of a special directive by the Board, no new Regulation or alteration to any existing Regulation relating to classification or to class notations is to be applied to existing ships.
- b. Except in the case of a special directive by the Board, or where changes necessitated by mandatory implementation of International Conventions, Codes or Unified Requirements adopted by the International Association of Classification Societies are concerned, no new Rule or alteration in any existing Rule is to be applied compulsorily after the date on which the contract between the ship builder and shipowner for construction of the ship has been signed, nor within six months of its adoption. Notification of a new Rule or alteration may be issued on, or shortly after, the adoption date. The notice will include reference to the new Rule or marked up rule text showing alterations and any relevant IACS or IMO requirements. The date of 'contract for construction' of a ship is the date on which the contract to build the ship is signed between the prospective shipowner and the ship builder. This date and the construction number (i.e. hull numbers) of all the vessels included in the contract are to be declared by the party applying for the assignment of class to a newbuilding. *(part only shown)*

Chapter 1 General

■ Section 1 Introduction

1.2 Certification

1.2.12 Lifting appliances which fully meet the requirements for certification by LR (see [Ch 1, 1.2 Certification 1.2.5](#), [Ch 12, 3.2 Initial Survey of new installations](#) and [Ch 13, 2.1 Initial Surveys](#)) and are under Periodical Survey by LR (see [Ch 12, 3.4 Periodical Thorough Examinations](#) and [Ch 13, 2.2 Periodical Surveys](#)) are eligible to be assigned a descriptive note **LAC** at the Owner's request.

Chapter 8 Fittings, Loose Gear and Ropes

■ Section 6 Steel wire ropes

6.1 General

6.1.1 Steel wire ropes are generally to comply with the requirements of an International or a recognised National or International Standard and are to be suitable for the use for which they are proposed in accordance with the manufacturer's recommendations.

6.1.2 Steel wire ropes are to be manufactured at works which have been approved by LR. ~~A list of Approved Manufacturers of Steel Wire Ropes appears in LR's Lists of Approved Manufacturers of Materials~~ The approved manufacturers of steel wire ropes are published in the LR Approvals client portal (www.lr.org/en/lr-approvals). Proposals to use steel wire rope manufactured elsewhere will be specially considered.

6.1.3 Rope grades higher than those given in [Table 8.6.1 Rope grade and range of wire tensile strength](#) will be specially considered. For these proposed higher grades, the manufacturer shall, as a minimum, consider the potential effects of strain ageing (as described in [Ch 6 6.2 Manufacture and chemical composition 6.2.4](#) and [Ch 6 6.2 Manufacture and chemical composition 6.2.5](#) of the [Rules for the Manufacture, Testing and Certification of Materials](#)) and prepare a technical justification identifying precautionary measures or any other identified special measures for mitigating the effects of strain ageing.

6.2 Steel wire for ropes

6.2.1 The wire used in the manufacture of rope-steel wire ropes is to be drawn from steel manufactured by an approved process. It is to be of homogeneous quality and consistent strength and free from visual defects likely to impair the performance of the rope.

6.2.2 Ropes are to be constructed from individual wires with the following tensile strength grades, with the following range of strengths permitted, as indicated in [Table 8.6.1 Rope grade and range Range of wire tensile strength grades, N/mm²](#).

Table 8.6.1 Rope grade and range Range of wire tensile strength grades, N/mm²

Nominal rope grade Rope grade (nominal) (see Note)	Range of wire tensile strength grades, N/mm ²
1570	1370 to 1770
1770	1570 to 1960
1960	1770 to 2160
2160	1960 to 2360
Note. Other intermediate rope grades may be supplied by agreement between the purchaser and the manufacturer	

6.2.3 The permitted variation of breaking tensile strength of individual wires for each of the above grades is to be in accordance with [Table 8.6.2 Permitted variations in tensile strength](#).

Table 8.6.2 Permitted variations in tensile strength

Nominal diameter of individual wire, d , mm	Permitted variation above nominal tensile strength, Variation in tensile strength above the lower range value (as specified in Table 8.6.1) N/mm ²
$0,2 \leq d < 0,5$	390
$0,5 \leq d < 1,0$	350
$1,0 \leq d < 1,5$	320
$1,5 \leq d < 2,0$	290
$2,0 \leq d < 3,5$	260
$3,5 \leq d < 7,0$	250

6.2.4 The wire is to be galvanised by a hot dip or electrolytic process to give a continuous uniform coating. However, consideration will be given to the acceptance of non-galvanised and stainless steel wire in certain applications.

6.3 Construction and application

6.3.3 The steel wire rope is to be uniformly made and the strands are to lie tightly on the core or on the underlying strands. The free ends of all steel wire ropes are to be secured against untwisting (serving). Wire Steel wire ropes are to be thoroughly lubricated.

6.3.4 Wire Steel wire ropes for running rigging are to be constructed of not less than six strands over a main core. Each strand is, generally, to consist of not less than 19 wires and may have a fibre or a wire core. Where the strand has a fibre core, the wires are to be laid around it in not less than two layers.

6.3.5 Wire Steel wire ropes with four strands may be considered for running rigging, provided each strand is of an elliptical section and is constructed with at least 39 wires. Bending fatigue tests are to demonstrate that the fatigue life of the rope is at least equivalent to that of a similar six strand rope.

6.3.6 Wire Steel wire ropes for standing rigging, guy pendants and similar applications are generally to be constructed of six strands over a wire core.

6.3.7 Four and six strand rope with Lang's lang's lay construction will not normally be accepted for the hoisting system of any lifting appliance. They may, however, be used in purchases designs which are rotationally restrained, e.g. crane luffing systems or in shiplift winch systems.

6.3.8 Lang's lay construction is acceptable for high performance and compact multi-strand ropes as these ropes have good torsion resistance properties.

6.3.9 Types of construction and diameter ranges of standard round strand ropes, size, grade and minimum breaking loads for steel wire ropes are given in ISO 2408. [Table 8.6.3 Types of construction and diameter ranges – Round strand](#).

Table 8.6.3 Types of construction and diameter ranges – Round strand (this table has been deleted)

Rope designation	Rope construction	Type of main core	Available diameter range, in mm
6-stranded ropes			
- 6 × 7	6 (6 + 1)	fibre or steel	2 to 40
- 6 × 19	6 (12 + 6 + 1)	fibre	3 to 60
-	-	steel	8 to 60
- 6 × 37	6 (18 + 12 + 6 + 1)	fibre	6 to 60
- 6 × 19 Seale	6 (9 + 9 + 1)	fibre or steel	8 to 60
- 6 × 19 Filler	6 (12 + 6F + 6 + 1)	fibre or steel	8 to 60
- 6 × 26 Warrington-Seale	6 (10 + 5/5 + 5 + 1)	fibre or steel	9 to 60
- 6 × 31 Warrington-Seale	6 (12 + 6/6 + 6 + 1)	fibre or steel	11 to 60
- 6 × 36 Warrington-Seale	6 (14 + 7/7 + 7 + 1)	fibre or steel	13 to 60
- 6 × 41 Warrington-Seale	6 (16 + 8/8 + 8 + 1)	fibre or steel	16 to 60
- 6 × 12	6 (12 + FC)	fibre	8 to 32
- 6 × 24	6 (15 + 9 + FC)	fibre	8 to 40
8-stranded ropes			
- 8 × 19 Seale	8 (9 + 9 + 1)	fibre or steel	8 to 60
- 8 × 19 Filler	8 (12 + 6F + 6 + 1)	fibre or steel	8 to 60
Multi-strand ropes			
- 17 × 7	11 (6 + 1) + 6 (6 + 1)	fibre or steel	8 to 38
- 18 × 7	12 (6 + 1) + 6 (6 + 1)	-	8 to 38
- 34 × 7	17 (6 + 1) + 11 (6 + 1) + 6 (6 + 1)	fibre or steel	10 to 44
- 36 × 7	18 (6 + 1) + 12 (6 + 1) + 6 (6 + 1)	-	8 to 40

6.3.10 The construction and minimum breaking loads for some common rope types can be found in the current edition of ISO 2408. Consideration will be given to the use of other constructions and nominal strengths and to the requirements for particular applications.

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